

JUNE 13—JULY 22, 2011

# NUCLEAR FORENSICS UNDERGRADUATE SUMMER SCHOOL 2011

WASHINGTON STATE UNIVERSITY, PULLMAN WA

## Application Deadline March 18, 2011

Undergraduate Students specializing in the physical sciences are encouraged to apply. Applicants must be US Citizens. Fill out the ONLINE APPLICATION (link below).

### Applicants must submit:

- Brief Statement of Intent stating strengths, goals and interests
- Current Resume
- University Transcript (with copy of Spring 2011 schedule)
- One Letter of Recommendation from a Faculty Member or Technical Reference

### Submit application materials electronically to:

<http://institute.lanl.gov/institutes/application/>

Students will be notified of selection by March 25, 2011 (Requests for early decision can be considered individually—contact Susan Ramsay)

### For more information:

Susan Ramsay  
Los Alamos National Laboratory  
Email: [ramsay@lanl.gov](mailto:ramsay@lanl.gov)  
Phone: 505-665-7214  
Fax: 505-665-7895

### Student Stipend

Each student will receive room, one meal per day, and a \$5,000 stipend that includes travel.



## PURPOSE

In its second year, this six-week summer school, to be held June 13–July 22, 2011 on the Washington State University campus (shown above), is designed to provide comprehensive, experimental, hands-on training in topics essential to nuclear forensics as a means of interesting students in pursuing graduate studies in technical fields related to nuclear forensics.



## TECHNICAL FOCUS

Students will be trained in topical areas such as:

- Nuclear Decay
- Atomic and Nuclear Structure
- Nuclear Material Processes and Uses
- The Nuclear Fuel Cycle
- Radiation Detection
- Standard Analytical Methods
- Environmental Radiochemistry

## COURSE FORMAT

Two 2-hour blocks of lectures will be presented Monday-Thursday, with Friday reserved for hands-on laboratory experiments. Coursework will cover major topics in nuclear and radiochemistry, as well as in the chemical and physical characterization of actinide-bearing materials.



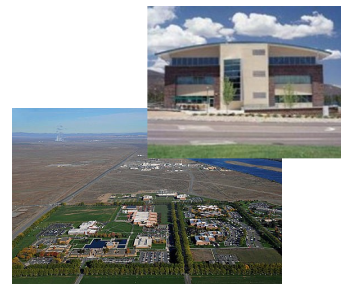
## OBJECTIVES

At the completion of this summer school, students will understand:

- The chart of nuclides, and be able to utilize it
- Different modes of radioactive decay
- Components of the nucleus and how it influences nuclear properties
- How fission is induced and the resulting products
- Radiation detection and mass spectroscopy, and be able to determine isotope concentration or ratios
- The fundamental components and chemistry in the nuclear fuel cycle
- The chemistry of key radio-nuclides in applications important to nuclear forensics
- The application of analytical methods in characterizing materials
- Contemporary issues in nuclear forensics

## FIELD TRIP

The 2011 Nuclear Forensics Summer School will include a field trip to a National Laboratory to provide participants a first-hand view of an operational environment.



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